

UNITED STATES DISTRICT COURT
DISTRICT OF NEW JERSEY

----- X
RAJESH KUMAR,

Plaintiff,

— v. —

THE INSTITUTE OF ELECTRICAL AND
ELECTRONICS ENGINEERS, INC.,

Defendant.
----- X

Case No. 2:12-cv-06870-KSH-PS

ORAL ARGUMENT REQUESTED

Motion Date: February 4, 2013

**DEFENDANT'S MEMORANDUM OF LAW
IN SUPPORT OF MOTION TO DISMISS THE COMPLAINT**

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PRELIMINARY STATEMENT

Defendant The Institute of Electrical and Electronics Engineers, Inc. (the “IEEE”) is, *inter alia*, a leading publisher of scientific texts, including an article published in 2003 in the proceedings of the 2003 IEEE/RSJ International Conference on Intelligent Robots and Systems entitled “Task Modeling and Specification for Modular Sensory Based Human-Machine Cooperative Systems,” written by D. Kragic and G.D. Hager (the “Article”). A copy of the Article is attached to the accompanying Declaration of Bruce R. Ewing (“Ewing Dec.”) as Exhibit B. In his November 5, 2012 complaint filed in this action (the “Complaint”), attached to the Ewing Declaration as Exhibit A, plaintiff Rajesh Kumar (“Kumar”) asserts that the Article, published ten years ago, infringes the copyright in his doctoral thesis published in 2001 and entitled “An Augmented Steady Hand System for Precise Micromanipulation” (the “Thesis”). A copy of the Thesis is attached to the Ewing Declaration as Exhibit C. Because Kumar has not stated a claim for copyright infringement, the Complaint is subject to dismissal under Fed. R. Civ. P. 12(b)(6).

There are two separate grounds for the dismissal of Kumar’s Complaint. First, while the Thesis as a whole is entitled to copyright protection, the allegedly infringed sections of the Thesis that were the subject of the pre-litigation correspondence between Kumar’s counsel and the IEEE that are referenced in Kumar’s Complaint are not copyrightable subject matter. More than a century of copyright precedent confirms that scientific procedures, facts and concepts are not copyrightable, and the U.S. Copyright Act expressly excludes from copyright protection “any idea, procedure, process, *system*, method of operation, concept, principle, or discovery, regardless of the form in which it is described, explained, illustrated or embodied in such work.” *See* 17 U.S.C § 102(b) (emphasis added). The Complaint itself admits that the Thesis “describes

a *system* for ‘steady hand manipulation,’ in which a surgical tool is manipulated cooperatively by a human user and a robot.” (Emphasis added.) Thus, Kumar’s own pleading confirms that what he is attempting to monopolize through this proceeding is not the expression of a novel idea of his own invention, but a “system” consisting of “common surgical tasks,” Thesis at pg. 78, to which Kumar has applied his expertise in the field of robotics, just as any other author in the field is permitted to do. Because allowing Kumar to claim copyright protection in a “system” is not permitted under the Copyright Act as a matter of law, and would have a chilling effect on both scientific research and the activities of research publishers like the IEEE, the Court should dismiss Kumar’s copyright infringement claim.

Kumar’s claim also fails because he cannot establish that the Article and the Thesis are “substantially similar,” as they must be in order for Kumar to maintain a claim for copyright infringement. A comparison of the relevant passages from the Article and the Thesis demonstrates that the modes of expression they use are very different from each other, as are the manner in which they discuss research concerning the subject at issue. To the extent there are similarities, they are solely attributable to the fact that both publications describe research performed at the same laboratory, using the same equipment, in the same field. As a matter of law, after excluding unprotectable material and scientific facts, the notable dissimilarities between the two works preclude any possibility of copyright infringement, such that a dismissal of Kumar’s complaint on this ground is also warranted.

Finally, because Kumar’s copyright infringement claim is so deficient as to be objectively unreasonable, and has also obviously been brought improperly for the purpose of suppressing scientific discussion in the field of robotics rather than vindicating Kumar’s rights

under the U.S. Copyright Act, the IEEE also requests that the Court award it the attorney's fees it has incurred in defending itself in this proceeding, pursuant to 17 U.S.C. § 505.

STATEMENT OF FACTS¹

Kumar is the author of the Thesis, which is based on research he performed at Johns Hopkins University. Complaint, ¶ 7.

In brief, the Thesis describes a system for “steady hand manipulation,” in which a surgical tool is manipulated cooperatively by a human user and a robot. The Thesis explores “encoding/utilizing task descriptions to improve transparency and performance of a steady-hand manipulation task” in the particular context of retinal vein cannulation.²

Id., ¶ 8; *see also* Ewing Dec., Exh. C (Thesis) at pp. 68-69 (explaining retinal vein cannulation).

The Thesis was published in 2001 and is the subject of a registration issued by the U.S.

Copyright Office effective September 25, 2001. *Id.*, ¶¶ 9-10.

In 2003, after the Thesis was registered for copyright, the IEEE published the Article in the proceedings of the 2003 IEEE/RSJ International Conference on Intelligent Robots and

¹ The facts summarized herein are presumed, for purposes of this motion, to be true and are taken from Kumar's Complaint and documents referenced therein, including the Thesis and the Article, as well as correspondence sent by Kumar to the IEEE that is referenced in paragraph 23 of the Complaint. *See West Penn Allegheny Health System, Inc. v. UPMC*, 627 F.3d 85, 102 n. 11 (3d Cir. 2010) (documents that are integral to or expressly relied on in a complaint may be considered on a motion to dismiss for failure to state a claim); *In re Burlington Coat Factory Securities Litigation*, 114 F.3d 1410, 1426 (3d Cir. 1997) (same); *Jersey Asparagus Farms, Inc. v. Rutgers University*, 803 F. Supp. 2d 295, 301 n. 5 (D.N.J. 2011) (same).

² “Cannulation” is the insertion of a small tube (or cannula) into a body cavity, duct or vessel. *See* Ewing Dec., Exhs. D and E (definitions of “cannulate” and “cannula” taken from Merriam-Webster Dictionary Online, available at <http://www.merriam-webster.com/dictionary/cannulate> and <http://www.merriam-webster.com/dictionary/cannula>). *See also Hemy v. Perdue Farms, Inc.*, Civ. Act. No. 11-888 (FLW), 2011 WL 6002463, at *15 (D.N.J. Nov. 30, 2011) (definitions from Merriam-Webster Dictionary Online may be considered on motion to dismiss in aid of interpreting terms used in complaint).

Systems. *Id.*, ¶¶ 11-12.³ The Article was made available to attendees at that Conference and thereafter through the IEEE publications database, where it has since remained on sale. *Id.*, ¶ 13. According to Kumar, the Article infringes his copyright in the Thesis because it “describes the same problem, experimentation and solution as the Thesis – namely ‘human machine cooperative systems’ in the specific context of vitreo-retinal eye surgery.” *Id.*, ¶ 14. Both the Article and the Thesis describe work performed at the same laboratory, using the same equipment. *Id.*

Although the Complaint claims that the Article contains “text and graphics that are copied from and/or substantially similar to protectable material contained in the Thesis,” *id.*, ¶ 15, the allegedly infringed and infringing materials are not specified in Kumar’s pleading. *Id.* However, as the Complaint acknowledges, Kumar, through counsel, previously “notified IEEE of the infringement in writing,” *id.*, ¶ 23, and that correspondence detailed the passages in the Article that Kumar claims were copied from the Thesis. Ewing Dec., Exhs. F and G.

The majority of the alleged similarities in the Article and the Thesis to which Kumar has pointed concern the manner in which both publications describe the process of retinal vein cannulation as augmented by robotic technology. Specifically, Kumar has asserted that the following excerpt from the Article “mirrors” the subsequent passage from the Thesis:

³ In an apparent effort to explain why it took nine years after the Article was published for him to initiate this lawsuit, and thereby avoid a limitations defense, Kumar asserts that he did not discover the Article until April 2010 and was, for a number of years beforehand, suffering from significant health problems. Complaint, ¶¶ 20-22. While the validity of this effort to plead around the statute of limitations is a matter the Court may need to resolve if this case is not dismissed, these particular allegations in the Complaint need not be considered on this motion.

Article: Ewing Dec., Exh. B at pg. 2.⁴

¹As an example, retinal vein cannulation [7] involves ²positioning and orienting³ of a needle to the vicinity of the vein, ⁴inserting⁵ it when appropriate until contact is represented as *states* in a task graph, with *transitions* as connections between them, see Figure 1.

Thesis: Ewing Dec., Exh. C at pg. 18.

The skeleton sequence is parsed and used to construct the task graph. The task⁵ graph is a finite state machine, with action completion predicates deciding state transition.¹ For example, a simple surgical task of placing a micropipette in a blocked vessel in the eye is composed of several actions: a) ²positioning the tool at the port, ³b) orienting it such that it can be inserted, c) ⁴insertion of the tool, d) adjusting the orientation of the tool for placement at site viewing through the visual feedback device (usually a high power microscope), e) approaching the site, and f) achieving contact. This task has both coarse manipulation (positioning and orientation leading to the port) and fine manipulation inside the organ. Each of these parts can be implemented as an action. The conditions that need to be met before each action are identified. They form the predicates for that action. If the actions are composed of several primitives, the process of identifying primitives is repeated for the actions. Finally the user identifies safety requirements, such as limits on motion, sensory values etc for each action. A Task representation is generated using these actions. This serves as a skeleton for the task graph. The task graph is then executed in a training environment. During execution the user may identify redundant or additional actions, predicates that modify the task graph.

The System maintains a basic set of states, and predicates. These include initialization and cleanup, a manipulation set, data collection set, and safety and error checking predicates.

See Ewing Dec., Exh. G at pp. 3-4.

Likewise, Kumar claims that a figure used in the Article that graphically depicts the process of retinal vein cannulation, as conducted using a human-robot cooperative “system,” was wrongfully copied from a figure contained in the Thesis. (A comparison of the figure used in the Thesis with the excerpt from the Thesis appearing directly above from Ewing Dec., Exh. C at pg. 18, demonstrates that the figure is simply a graphic depiction of what is contained in the text.)

⁴ Any citations appearing in red in the excerpts to the Thesis and the Article reproduced in this memorandum are not contained in those two excerpts as originally published, but were apparently added to Kumar’s pre-litigation correspondence with the IEEE to identify particular words or concepts appearing in both publications that he contends are identical or substantially similar. *Compare* Ewing Dec., Exh. G at pp. 3-4 *with* Ewing Dec. Exh. B at pg. 2 and Ewing Dec., Exh. C at pg. 18.

Article: Ewing Dec., Exh. B at pg. 2.

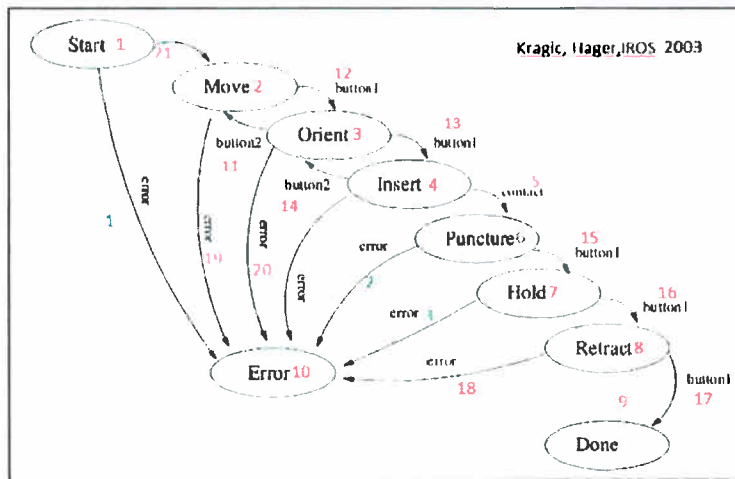


Fig. 1. An example of a basic task graph for vein cannulation.²⁷

Thesis: Ewing Dec., Exh. C at pg. 70.

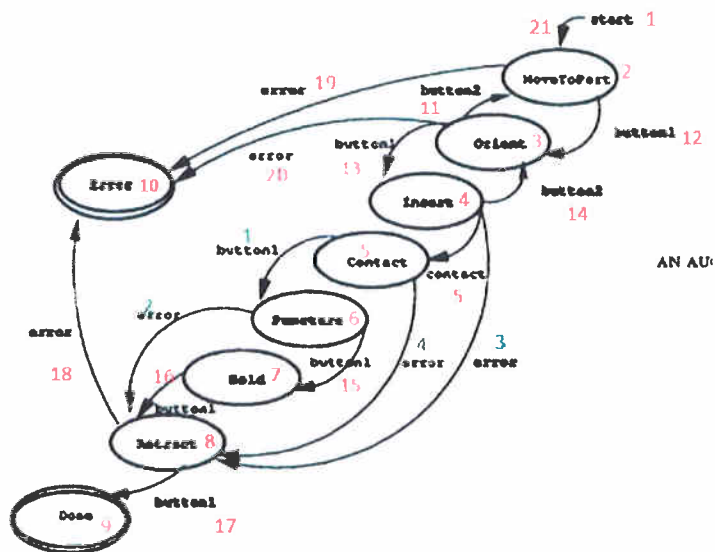


Figure 5.13: Task graph for retinal vein cannulation.²²

See Ewing Dec., Exh. G at pp. 4-6.

In addition, Kumar has asserted that certain “routines and primitives”⁵ discussed in the Article have been wrongfully copied from the Thesis, as set forth below:

Article: Ewing Dec., Exh. B at pg. 3.

From Section IV of the Article:

IV. BASIC PRIMITIVES

The instructions to the low-level motion controller of the robot are passed from the basic primitives. The primitives have a common interface with functions such as *Start()*, *Run()* and *Stop()*. The core functions are defined in a base class, so if the user wants to design a new module, all the basic functionality is inherited from the base class and only the module specific parts have to be implemented. Basically, these are the steps required:

- Assign a name to the class.
- Initialize the necessary variables in the *Start()*.
- Implement the control loop in *Run()*.
- Clean up in *Stop()*.

As an example, in Figure 1 the *Move* primitive would allow only the Cartesian base motion to move the remote center of motion (RCM) to the vicinity of the object to be manipulated. This is opposed to the *Orient* which uses only rotational and end-effector joints which keeps the RCM fixed for fine manipulation motions. The *Insert* primitive would allow only the motion along the current tool axis

⁵ In the context of computer science, a “primitive” is a “basic or fundamental unit of machine instruction or translation.” See Ewing Dec., Exh. H, definition of “primitive” accessible at <http://www.thefreedictionary.com/primitive>.

Thesis: Ewing Dec., Exh. C at pp. 44-45, 56.

The user provides a task skeleton in form of a composition of actions (e.g. for peg in hole, actions for positioning over the hole, inserting, and detecting contact etc.). For cooperative manipulation this task skeleton is a simple and sufficient mechanism for representing task strategies.

Definition 4.4 (Task) *A composition of actions that performs designed to achieve a specific manipulation or sensing goal.*

The skeleton sequence is parsed and used to construct the task graph. A task skeleton contains forward declarations of its actions and events, a task initialization section, and a global event map, and definitions of actions and their event maps, and events. For the above task, this task skeleton looks like:

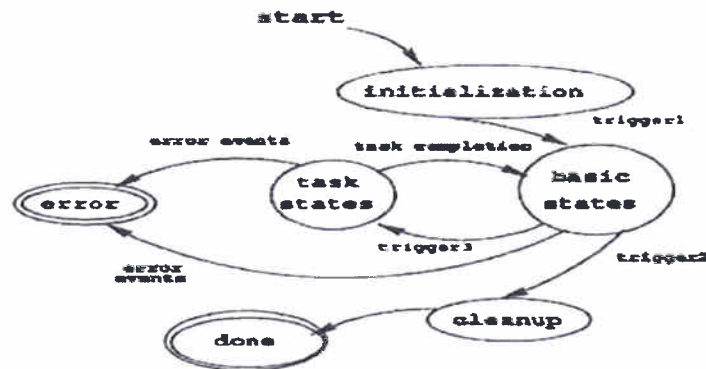


Figure 4.1: System model for executing task graph specifications. The basic functionality of the system allows the user to manipulate the robot. The task states represent the task graph for the current task. The user can choose to execute the task graph or halt execution. During the task graph execution, completion of the task returns control to basic system states.

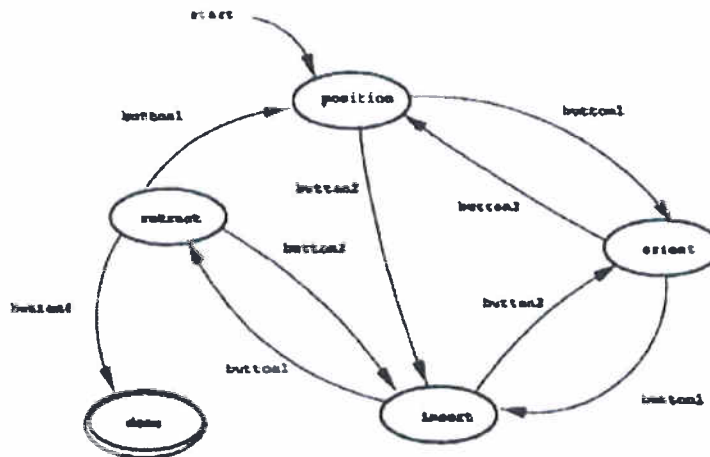


Figure 5.2: A Peg in hole task graph. The user uses the base stages of the robot to roughly position the robot, then uses the rotational degrees of freedom to orient the probe before inserting in the hole. In this version of the task, the user signals the transition by using the foot pedal.

See Ewing Dec., Exh. G at pp. 6-8.

Kumar has also asserted that various experimental steps set forth in the Article are discussed in the Thesis, but, again, as to the Thesis, these are the same tasks depicted in the excerpts from the Thesis and the accompanying figure depicted, *supra*, at pp. 5 and 6.

Article: Ewing Dec., Exh. B at pg. 5.

VIII. EXAMPLE SCENARIO

Let us now study the execution of the vein cannulation procedure as shown in Figure 1. The following primitives are used to model the task:

- 1 **MOVE:** move the instrument from a starting position to some position close to the surface.
 - 2 **ORIENT:** align the instrument parallel/perpendicular to the surface.
 - 3 **INSERT:** move the instrument tip along current tool axis through until touching the opposite inner cylinder wall.
 - 4 **PUNCTURE and HOLD:** prepare and perform puncturing.
 - 5 **RETRACT:** carefully withdraw the instrument tip in the direction of the tool axis.
- DONE:** move instrument roughly back to the starting position/away from the surface and report that the task was successfully performed.
- ERROR:** if an error is reported, either i) exit or ii) continue with the execution allowing the user to choose the next state.

Thesis: Ewing Dec., Exh. C at pg. 99

Retinal vein cannulation

The task initialization for vein cannulation (figure 5.13) is similar to earlier tasks. The task has seven task specific actions. These actions are implemented as:

<p>1 action movetopoint{ <code>fconv=vector(2,2,2);</code> <code>ComplyBaseJoints;</code> <code>}</code> events { <code>on event1 orient;</code> <code>}</code></p>	<p>3 action insert{ <code>fconv=vector(2,2,5);</code> <code>ComplyArmJoints;</code> <code>}</code> events { <code>on event2 orient;</code> <code>on contactevent contact;</code> <code>}</code></p>
<p>2 action orient{ <code>fconv=vector(2,2,2);</code> <code>ComplyArmJoints;</code> <code>}</code> events { <code>on event2 movetopoint;</code> <code>on event1 insert;</code> <code>}</code></p>	<p>5 action retract{ <code>fconv=vector(2,2,5);</code> <code>ComplyArmJoints;</code> <code>}</code> events { <code>on event1 done;</code> <code>}</code></p>

4 The actions hold, and contact are empty actions to allow the user to pause between contact and puncture and puncture and hold. The puncture action calls a puncture routine that uses the contact force profile to perform an automatic puncture.

See Ewing Dec., Exh. G at pp. 8-9.

Apart from these four alleged instances of wrongful copying, Kumar has also asserted that Section III of the Article, entitled “System Design,” “describes the system disclosed by the Thesis” in Chapters 2 and 3 and at pp. 71-72 and 82, because that Section references the “elements of the system design, task analysis, task decomposition, and implementation of routines that had all been performed in the Thesis for the same task (retinal vein cannulation).” Ewing Dec., Exh. F at pg. 4; Exh. B at pg. 2; Exh. C at pp. 9-35, 71-72, 82. Finally, Kumar has claimed that Section IX of the Article, Ewing Dec., Exh. B at pg. 6, articulates “virtually the same conclusions” as the Thesis and “discusses the same potential future applications” as the Thesis in Chapters 6 and 7. Ewing Dec., Exh. F at pg. 4; Exh. C at pp. 78-85.

ARGUMENT

POINT I

THE COURT SHOULD DISMISS KUMAR’S COMPLAINT FOR FAILURE TO STATE A CLAIM FOR COPYRIGHT INFRINGEMENT

To survive a motion to dismiss under Fed. R. Civ. P. 12(b)(6), a pleading “must contain sufficient factual matter, accepted as true, to ‘state a claim to relief that is plausible on its face.’” *Ashcroft v. Iqbal*, 556 U.S. 662, 678 (2009) (quoting *Bell Atl. Corp. v. Twombly*, 550 U.S. 544, 570 (2007)); *West Penn Allegheny Health System, Inc. v. UPMC*, 627 F.3d 85, 98 (3d Cir. 2010). A claim cannot be grounded on mere suspicion but must rest on “factual allegations sufficient to raise a right to relief above the speculative level.” *Twombly*, 550 U.S. at 555. “A pleading that offers ‘labels and conclusions’ or ‘a formulaic recitation of the elements of a cause of action will not do.’ Nor does a complaint suffice if it tenders ‘naked assertion[s] devoid of further factual enhancement.’” *Iqbal*, 556 U.S. at 678 (quoting *Twombly*, 550 U.S. at 555); *Wiseberg v. Toyota Motor Corp.*, Civ. Act. No. 11-3776 (JLL), 2012 WL 1108542, at *3 (D.N.J. March 30, 2012). If the party asserting a claim “ha[s] not nudged their claims across the line from conceivable to

plausible, their complaint must be dismissed.” *Twombly*, 550 U.S. at 570. This standard does not require that a plaintiff’s probability of success must be established at the pleading stage, but it does require the pleading of enough facts to “‘raise a reasonable expectation that discovery will reveal evidence’” of any element necessary to a claim. *Phillips v. County of Allegheny*, 515 F.3d 224, 234 (3d Cir. 2008) (quoting *Twombly*, 550 U.S. at 556).

In order to plead a claim for copyright infringement, a plaintiff must assert “(1) ownership of a valid copyright; and (2) unauthorized copying of original elements of the plaintiff’s work.” *Del. Valley Fin. Group, Inc. v. Principal Life Ins. Co.*, 640 F. Supp. 2d 603, 620 (E.D. Pa. 2009). With respect to the first element, copyright protection extends to the author’s expression of ideas, but not to the ideas themselves, which anyone may freely copy. *Pino v. Viacom, Inc.*, Civil No. 07-3313 (AET), 2008 WL 704386, at *5 (D.N.J. March 4, 2008). With respect to the second element, copying may be pleaded by asserting both that the defendant had access to the allegedly infringed work and that there is “substantial similarity between the two works.” *Wizkids Creations Co. v. SEPTA Transportation*, No. Civ. A 02-3249, 2003 WL 21250661, at *3-4 (E.D. Pa. Feb. 27, 2003). Substantial similarity is assessed through a bifurcated test in which the trier of fact must first determine if the works are sufficiently similar to conclude that copying has occurred (the “extrinsic test”), and then determine whether a “lay observer” would find any similarities to be the result of “unlawful” or “illicit” copying (the “intrinsic test”). *Id.*, at *4 (citations and internal quotations omitted); *Douglas v. Kimberly-Clark Corp.*, Civ. A. No. 92-3394, 1993 WL 9033, at *2-3 (E.D. Pa. Jan. 11, 1993).

Applying the controlling pleading standard to the legal test for copyright infringement, Kumar’s claim cannot stand.

A. Kumar Cannot Establish That the
Allegedly Infringed Elements of His Thesis Are Copyrightable

For purposes of this motion, the IEEE does not dispute that the Thesis, as a whole, is entitled to copyright protection, but the relevant question is whether the aspects of the Thesis that Kumar claims have been infringed are protectable subject matter under the Copyright Act. The answer to that question is that they are not.

More than a century ago, in the case of *Baker v. Selden*, 101 U.S. 99 (1879), the U.S. Supreme Court recognized that systems, processes, scientific facts and other like materials are not eligible for copyright protection. In that case, the plaintiff argued that the copyrights he had secured in a series of books concerning bookkeeping prohibited the defendant from using certain forms modeled on the plaintiff's system. *Id.* at 100-01. The Supreme Court rejected this contention, holding that “[w]here the truths of a science or the methods of an art are the common property of the whole world, any author has the right to express the one, or explain and use the other, in his own way.” *Id.* Thus,

A treatise on the composition and use of medicines, be they old or new; on the construction and use of ploughs, or watches, or churns; or on the mixture and application of colors for painting or dyeing; or on the mode of drawing lines to produce the effect of perspective, would be the subject of copyright; but no one would contend that the copyright of the treatise would give the exclusive right to the art or manufacture described therein.

Id. at 102.

The principle that copyright protection does not extend to scientific facts or systems like those at issue in *Baker* was subsequently incorporated expressly into the Copyright Act, in 17 U.S.C. § 102(b), which provides that “[i]n no case does copyright protection for an original work of authorship extend to any idea, procedure, process, system, method of operation, concept, principle, or discovery, regardless of the form in which it is described, explained, illustrated or

embodied in such work.” *See also Golan v. Holder*, -- U.S. --, 132 S. Ct. 873, 890 (2012) (“every idea, theory and fact in a copyrighted work becomes instantly available for public exploitation at the moment of publication; the author’s expression alone gains copyright protection.”) (internal quotations and citation omitted); *Whelan Associates, Inc. v. Jaslow Dental Laboratory, Inc.*, 797 F.2d 1222, 1234 (3d Cir. 1986) (section 102(b) was enacted to restate the axiom that “copyright does not protect ideas, but only expressions of ideas”).

Likewise, the U.S. Copyright Office, in interpreting section 102(b), has further elaborated that:

Copyright law does not protect ideas, methods, or systems. Copyright protection is therefore not available for ideas or procedures for doing, making, or building things; scientific or technical methods or discoveries; business operations or procedures; mathematical principles; formulas or algorithms; or any other concept, process, or method of operation.

U.S. Copyright Office Circular 31, attached to the Ewing Declaration as Exhibit I. Applying the principles of *Baker*, as reflected in 17 U.S.C § 102(b), to the facts of this case, it is apparent that the elements of the Thesis in which Kumar claims copyright protection consist entirely of non-copyrightable subject matter.

Indeed, the core of the material in which Kumar claims copyright protection is, as the Complaint acknowledges, “a *system* for ‘steady hand manipulation,’ in which a surgical tool is manipulated cooperatively by a human user and a robot.” Complaint, ¶ 8 (emphasis added). Since 17 U.S.C § 102(b) specifically precludes such a “system” from enjoying copyright protection, any copying of it is not actionable. Thus, when the Thesis describes a “system” for retinal vein cannulation and refers to that “system” as involving the “positioning” of a surgical tool, “orienting it such that it can be inserted,” inserting the tool, approaching the site of the retinal blockage and achieving contact, *see* pg. 5, *supra*, all the Thesis is doing is describing one

of several “common surgical tasks” as augmented by robotic technology. Ewing Dec., Exh. C at pg. 78; *see also id.*, at pg. 51 (describing a subject of Thesis as “generic tasks in surgical procedures that may be augmented by a single surgical assistant”), pg. 54 (characterizing retinal vein cannulation and other procedures discussed in section 5.3 of the Thesis as “common manipulation tasks”). No author, whether Kumar or anyone else, could own a copyright in “common manipulation tasks” or the idea of human-robot cooperation in performing such tasks. And, when the Article, in describing the same subject as the Thesis, uses words like “positioning,” “orienting” and “inserting,” *see* pg. 5, *supra*, to describe a “system” through which “generic tasks in surgical procedures” are facilitated by human-robot cooperation, there is no copyright infringement because the procedure being described is not copyrightable. *See Paziienza v. Saint Barnabas Medical Center*, 921 F. Supp. 1274, 1276 (D.N.J. 1995) (defendants are free to copy unprotectable ideas without being subject to liability for copyright infringement).

The case of *Ho v. Tafllove*, 696 F. Supp. 2d 950, 954-55 (N.D. Ill. 2010), illustrates this point. There, the plaintiffs, an engineering professor and his graduate assistant, created an innovative atomic model that was implemented and validated for various applications through research. *Id.* at 952. The model and the research were the subject of various copyrighted publications authored by plaintiffs. *Id.* at 953. Subsequently, the defendants, another engineering professor and his graduate assistant at the same institution, authored research papers “describing the Model and discussing its applications. Some of the figures and equations published in [one of the plaintiff’s] thesis were used in these articles.” *Id.* Defendants’ publications resulted in a lawsuit by plaintiffs for, *inter alia*, copyright infringement. The defendants filed a motion to dismiss or for summary judgment, and the court held that the allegedly infringed material, consisting of the model, the equations and the accompanying

figures were not protected by copyright as a matter of law. *Id.* at 954-55. Here, the “system” described in the Thesis is no more copyrightable than the model at issue in *Ho*, which means that the Article is likewise not infringing as a matter of law. *See also Hasset v. Hasselbeck*, 757 F. Supp. 2d 73, 89 (D. Mass. 2010) (description of medical condition not copyrightable because such description was a scientific fact).

Likewise, as in *Ho*, the use of a figure in the Article that depicts in graphic form what is described in its text, using words like “Start,” “Move,” “Orient,” etc., all the way to “Done,” *see* pg. 6, *supra*, does not violate Kumar’s copyright because the allegedly infringed figure appearing in his Thesis is not copyrightable. The Supreme Court recognized as much in *Baker*, when it held that “[t]he copyright of a work on mathematical science cannot give to the author an exclusive right to the methods of operation which he propounds, *or to the diagrams which he employs to explain them . . .*” *Id.*, 101 U.S. at 103 (emphasis added); *see also Igram v. Page*, No. 98 C 8337, 1999 WL 705895, at *2 n. 1 (N.D. Ill. 1999) (lists of symptoms of various ailments were not subject to copyright protection). Similarly, when the same recitation of steps appears, again, in the Thesis to describe the “system” for retinal vein cannulation summarized by Kumar, *see* pg. 9, *supra*, that recitation is no more protectable there than it was when it appeared in other sections of the Thesis or in the allegedly infringed figure. *Compare* Thesis excerpts reproduced at pg. 9, *supra* with those reproduced at pp. 5-6, *supra*.

The other allegedly infringed material from the Thesis is similarly incapable of being subject to copyright protection as a matter of law, as it merely consists of lists of “primitives” or basic routines or tasks in which no author can claim exclusivity. *See* pp. 7-8, *supra*. Similarly, when Kumar claims that the Article discusses “elements of the system design, task analysis, task decomposition, and implementation of routines [that] had all been performed in the Thesis for

the same task (retinal vein cannulation),” Ewing Dec., Exh. 5 at pg. 4, it is manifest that what he is trying to protect is a set of procedures integral to the “system” for retinal vein cannulation with which the Thesis is concerned. The Copyright Act does not allow Kumar to claim exclusivity over such a “system” or the concept of human-robot cooperation in undertaking surgical procedures, and thereby stifle other researchers and scientific publishers like the IEEE from creating and disseminating articles that advance scientific research. *See DeBitetto v. Alpha Books*, 7 F. Supp. 2d 330 (S.D.N.Y. 1998) (where two books were both concerned with veterinary care for dogs, no copyright infringement claim could be maintained as a matter of law where similarities pertained to “unprotectible elements of [plaintiff’s book], including statements of scientific or medical fact or procedures for caring for a dog.”).

As for the wholly conclusory claim that the conclusions drawn by Kumar and the authors of the Article from work performed at the same laboratory using the same equipment are infringing, Complaint, ¶ 14; Ewing Dec., Exh. F at pp. 4-5, such conclusions represent uncopyrightable ideas over which Kumar cannot claim exclusive rights. *See Pino*, 2008 WL 704386, at *5; *Hassett*, 757 F. Supp. 2d at 82-85 (no claim of copyright infringement could be maintained where claimed similarities were attributable to common subject matter of books (celiac disease) and ideas promulgated by both authors for coping with such disease were not copyrightable).

* * * * *

As the foregoing recitation demonstrates, what Kumar is attempting to accomplish in this proceeding is to claim exclusivity in basic scientific techniques and “systems” and thereby prevent others from discussing, augmenting or advancing research in the field of robotics. Scientific progress cannot occur if scientists like Kumar are allowed to claim ownership not

merely in the expression of their ideas, but in their ideas themselves, the processes through which their research is conducted, and the results of such research. Further, the field of scientific publishing would be fraught with peril if publishers like the IEEE could be subjected to claims of copyright infringement simply for publishing research articles that concern “systems” described in prior research. In order to protect the IEEE’s right to publish research papers like the Article that do nothing more than cover a scientific subject and related experimentation that are also discussed in previously published materials, the Court should dismiss Kumar’s copyright infringement claim because the material in which he claims exclusivity is not subject to copyright protection.

B. As a Matter of Law, the Allegedly Infringing Passages of the Article Are Not Substantially Similar to the Contents of the Thesis

Apart from the fact that the allegedly infringed portions of the Thesis are not eligible for copyright protection, Kumar’s claim for copyright infringement fails because the allegedly infringing portions of the Article are not substantially similar to the Thesis, whether assessed under the extrinsic or intrinsic tests. *See* pg. 11, *supra*. As a result, dismissal on this basis is also warranted.

In comparing the Article and the Thesis, any similarities between them must be “substantial,” such that no reasonable juror could fail to perceive their similarities. *Douglas*, 1993 WL 9033, at *2; *see also Curtin v. Star Editorial, Inc.*, 2 F. Supp. 2d 670, 673 (E.D. Pa. 1998) (dismissing copyright infringement claim where differences in compilations of photographs were so notable that substantial similarity could not be established as a matter of law). Further, to the extent the two publications contain “random similarities scattered throughout the works,” *Pino*, 2008 WL 704386, at *8 (internal quotation and citation omitted), this is not sufficient. And, any similarities attributable to the fact that both works discuss the

same subject – human/robot cooperation in “steady hand manipulation” in the context of retinal vein cannulation – are to be discounted from the analysis. Thus, for example, in comparing the competing veterinary guides at issue in *DeBitetto*, 7 F. Supp. 2d at 334-35, the court observed that “[b]ecause the topical coverage of the two books overlaps, it is expected that they would address many of the same topics and rely upon many of the same underlying facts,” such as “the way in which mange burrow into a dog’s skin and the problems they can cause” and “the appearance of roundworms, how they infect dogs, and the symptoms of roundworm infestation.” None of these similarities sufficed to make the two works at issue there “substantially similar,” and any similarities here that are attributable to the fact that both publications address the same topic are likewise insufficient.

As an initial matter, the scope of the Article, as evidenced by its considerably shorter length, is much more abbreviated than the Thesis, which covers a wide variety of topics that even Kumar does not contend are present in the Article. However, apart from their vast differences when reviewed in the aggregate, even the passages in the two works that are alleged to be substantially similar are not, as matter of law. For example, when looking at the detailed description of the “system” for retinal vein cannulation found in the Thesis, *see* pg. 5, *supra*, that is reproduced in both a graphic figure, *see* pg. 6, *supra*, and reiterated in substantial part in a description of experimental steps, *see* pg. 9, *supra*, and comparing those passages to their alleged counterparts in the Article, *see* pp. 5, 6, 9, *supra*, the only discernible similarities are the use of isolated words like “positioning,” “orienting,” “inserting,” “move,” “puncture,” “hold” and “error.” Apart from the fact that these words are used to denote various non-copyrightable stages of the process through which retinal vein cannulation takes place with the aid of robots, *see* Point I, *supra*, “it is well established that commonly used words, phrases and clichés are not

protectable.” See *Winstead v. Jackson*, Civil Action No. 10-5783 (SRC), 2011 WL 4407450, at *3 (D.N.J. 2011) (granting motion to dismiss claim for copyright infringement). As a result, the foregoing purported similarities are insufficiently substantial as a matter of law for Kumar’s copyright infringement claim to proceed.

As for the other alleged similarities to which Kumar points, they too are insubstantial, as a reading of the relevant passages demonstrates. Incredibly, Kumar has argued that a short section entitled “Basic Primitives” in the Article is substantially similar to sections of the Thesis because it contains the same “routines and primitives.” Ewing Dec., Exh. G at pp. 6-7. However, a comparison of the relevant passages reproduced, *supra*, at pp. 7-8, reveals no discernible similarity at all between them, let alone one substantial enough for Kumar to maintain a claim for copyright infringement.

Kumar also argues that the last section of the Article articulates “virtually the same conclusions” as the Thesis and “discusses the same potential future applications” as the Thesis in Chapters 6 and 7. The conclusion of the Article, in its entirety, appears as follows:

IX. CONCLUSION

In this paper, a Human-Machine Cooperative System for augmented surgical manipulation tasks was presented. The current system consists of three levels: i) task graph modeling and generation, ii) task graph execution and iii) low-level implementation of control primitives. The motivation for such a design is that the complex surgical tasks are commonly repetitive and sequential in nature consisting of simple steps. In the current system, the transitions between these steps are driven either by surgeon's input or sensory information. Consequently, complex tasks are modeled using a set of basic steps or primitives where each primitive defines some basic type of motion (e.g. translational motion along a line, rotation about an axis, etc.). In terms of control, the system simply complies to the users input where a number of different constraints (virtual fixtures) can be imposed.

The system is currently validated using the JHU Steady Hand Robot as an experimental platform. The example task presented above is analogous to many minimally invasive or constrained motion tasks. For medical applications, there are currently no systems that integrate both the visual and users input to define control input to the robot. We believe that our approach, which uses virtual fixtures to define a set of preferred robot motions, offers a powerful theoretical ground that allows for easy verification of control policies. Our future research will consider further experimentation with skilled users for applications using clinical conditions.

Ewing Dec., Exh. B at pg. 6. In contrast, a review of Chapters 6 and 7 of the Thesis, which collectively are seven pages in length, Ewing Dec., Exh. C at pp. 78-85, demonstrates that nothing found in the foregoing passage from the Article is reproduced in these chapters. Indeed, these chapters simply recapitulate the broad number of experiments discussed in prior chapters and the "system" described by Kumar, and they also offer a series of prescriptions from Kumar for future research, including detailed descriptions of the potential future application of the "system" described in the Thesis. None of this detail is contained in the Article, and to the extent there is any similarity between the conclusions drawn by researchers performing very similar work on the same subject using the same equipment, it is one so general and so limited to non-copyrightable subject matter that there cannot be any substantial similarity between the two works.

Due to this lack of substantial similarity, as is evident from the text of the Article and the Thesis themselves, Kumar's claim of copyright infringement fails on this basis as well.

POINT II

THE COURT SHOULD ISSUE AN AWARD OF ATTORNEY'S FEES TO THE IEEE PURSUANT TO 17 U.S.C. § 505

The Copyright Act of 1976, 17 U.S.C. § 505, provides in relevant part that in any copyright infringement action "the court may . . . award a reasonable attorney's fee to the prevailing party as part of the costs." "In awarding attorney's fees, 'prevailing plaintiffs and prevailing defendants are to be treated alike.'" *4C, Inc. v. Pouls*, Civil Action No. 11-00778 (JEI/KMW), 2012 WL 2343042, at *2 (D. Del. June 19, 2012) (quoting *Fogerty v. Fantasy, Inc.*, 510 U.S. 517, 534 (1994)). Some of the factors that can affect a district court's decision concerning an award of attorney's fees are: (1) the degree of success obtained; (2) frivolousness; (3) motivation; (4) the objective unreasonableness of the losing party's factual and legal arguments; and (5) the need, in particular circumstances, to advance considerations of compensation and deterrence. *Fogerty*, 510 U.S. at 534 n.19 (quoting *Lieb v. Topstone Indus., Inc.*, 788 F.2d 151, 156 (3d Cir. 1986)).

When a copyright plaintiff's claims are dismissed before trial, an award of attorney's fees is particularly justified. *Lowe v. Loud Records*, No. Civ. A. 01-1797, 2004 WL 527831, at *3 (E.D. Pa. March 17, 2004). Here, as if it were not already apparent from the text of the Thesis and the allegedly infringing portions of the Article that the subject of Kumar's claim for copyright infringement is a collection of unprotectable processes, surgical tasks and scientific facts, Kumar himself admits in paragraph 8 of the Complaint that the subject of his Thesis is a "system" that is statutorily excluded from copyright protection under 17 U.S.C. § 102(b). Given

this admission, and the utter lack of similarities between the parties' respective works beyond what is not protectable, Kumar should never have commenced this proceeding.

Moreover, on top of the objectively unreasonable nature of Kumar's claims, an award of attorney's fees is particularly appropriate here to deter future abuses of the Copyright Act like this one. Kumar is attempting to prevent the IEEE, a leading scientific publisher, from fulfilling its mission to advance the cause of scientific research by forcing it to withdraw from publication the Article, published over ten years ago, and thereby grant Kumar a monopoly over a "system" of human-robot cooperation with potentially broad utility in promulgating advanced surgical techniques. It is entirely improper for Kumar to use his copyright in the Thesis as a vehicle to prevent publishers like the IEEE from disseminating to the scientific community research papers like the Article, whose only commonalities with the Thesis consist of unprotectable scientific facts and discussions of standard surgical processes. In order to deter others from attempting to use the Copyright Act to suppress such important scientific discussions, the Court should award the IEEE its reasonable attorney's fees and costs incurred in having to defend itself against Kumar's baseless claims. *See Don Post Studios, Inc. v. Cinema Secrets, Inc.*, 148 F. Supp. 2d 572, 574 (E.D. Pa. 2001).

CONCLUSION

For all of the foregoing reasons, defendant The Institute of Electrical and Electronics Engineers, Inc. respectfully requests that the Court dismiss plaintiff's complaint under Fed. R. Civ. P. 12(b)(6) for failure to state a claim upon which relief may be granted.

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